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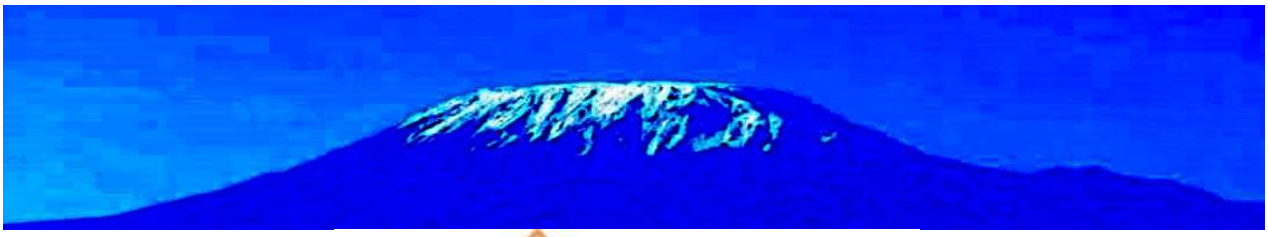

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Income Linkage as an Aspect Of Power Relations Among Chain Actors In The Groundnuts Seed Value Chain In Kongwa And Kiteto Districts, Tanzania.

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Abstract

This study aims at addressing limited knowledge on income linkages and power dynamics within the groundnuts seed value chain. The study population comprised members from three clusters: research institutes, village and district authority level, including innovation platform members in Kiteto and Kongwa Districts. Primary data was collected through focus group discussions and interviews, while secondary data was obtained from records relating to the groundnut crop and its value chain. Four Focus Group Discussions (FGDs) (two in Mlali Village-Kongwa District and two in Kiteto District) with a total of 48 purposively selected respondents participated in the discussions. Key informants were also selected using a purposive sampling technique to obtain a range of cases with relevant knowledge of the groundnut seed value chain. Social network data on income linkages among actors was analysed using the UCINET statistical software package integrated with the NETDRAW program to determine centrality measures and the level of influence and importance among chain actors. Qualitative data from semi-structured interviews were also analysed through content analysis involving breaking, comparing, and categorizing to complement the social network data. The study revealed that farmers and middlemen had the highest relative normalized betweenness compared to other actors in both district and village levels, indicating that they are powerful due to their importance in the value chain setup. The study concluded that there is a need to ensure inclusive and improved income linkages both vertically and horizontally with other actors for stable and functional groundnuts seed value chain.
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1.0 Introduction

Value chains have been used to understand the world of production, buying, and selling. They involve all key participants and their roles in adding value to a particular product or service (Cuddeford, 2014). The product or service is owned at some stage in the chain, and an exchange or relationship invested between these actors keeps the value chain working (Bitzer et al., 2015). Since its introduction, value chains have extended to various applications, including agriculture (Zamora, 2016). The concept behind value chains focuses on improving the quality of a product or service through activities that push competitiveness (Simatupang et al., 2017).

In the context of agricultural development, value chains explain the performance of a crop(s) from production to consumption. Different actors and their respective activities are involved in bringing an agricultural product or service from its simple to complex form (Cuddeford, 2014). Horizontal and vertical linkages among actors are vital for innovations that go beyond income merits. The horizontal linkages involve actors who work together to accomplish a common goal, while the vertical linkages focus on interactions among actors at different levels (Herrmann et al., 2015). Understanding the power exerted by these actors as a result of these linkages helps to contextualize their structural and relational dynamism (Choksy, 2015).

In developing countries, the groundnut value chain is associated with input and output market constraints. While China is the leading groundnut producer in the world, African countries, led by Nigeria, contribute approximately 35% of the total groundnuts produced globally (FAOSTAT, 2017; Katundu et al., 2012). In Tanzania, despite recording higher groundnut yields, recent reports show a decline in yields from 1.8 million tons in 2015 to 214,433 in 2017 (URT, 2018). Focusing on value chain actor-related factors, relations, and coordination among actors is key to the performance of the value chain and any crop at large (Oddone et al., 2014). The income distribution plays a bigger role in ensuring actors cooperate or compete as they perform their activities (Barayandema et al., 2017). Through value chain analysis, the involvement of actors, and their activities from production to consumption gives insights on the challenges and constraints that inform performance improvement (Stein and Barron, 2017).

Like any other seed crop chain, the groundnuts seed value chain would depend on a better linkage of actors to identify and resolve challenges collectively (ICRISAT, 2014). The value chain consequently becomes integrated through the firm-level of chain actors (Webber, 2007), with more income gap and benefit distribution affecting the level of influence and importance among the chain actors (Owusu-Adjei et al., 2017). Despite the abundance of literature on agriculture value chains, there is limited knowledge on income distribution and power dynamics among actors in the groundnuts seed value chain. This lack of understanding is critical in enhancing the value chain's performance because income distribution is a significant determinant of whether actors will collaborate or compete in their activities. Therefore, this study aimed at identifying gaps in income linkage and power relations among actors in the groundnuts seed value chain to inform improvement.

1.1 The Groundnuts Seed Value Chain Actors

The groundnut seed value chain involves a range of actors that operate at different levels. These actors consist of farmers, input suppliers, agro-dealers, processors, producers, traders, exporters, transporters, policymakers, local and central government leaders, and consumers (ICRISAT, 2014). In general, farmers represent the largest group in the value chain due to their critical role in the production process in both small and large-scale farming. As such, they are the primary target for seed producers, input suppliers, agro-dealers, research makers, and policymakers. Input suppliers are vital to the agriculture industry's innovation and productivity, providing critical services such as product extension and advisory services for production,

including seeds, fertilizers, pesticides, and their proper usage (Alex, 2019). Traders, processors, and exporters play a significant role in the marketing aspect of the value chain, adding value to crops produced by farmers and transferring produced or processed crops. Policymakers and local and central government leaders work to ensure that the market environment supports productivity through the development and enforcement of policies and laws that benefit all actors involved (Mofya-mukuka and Shipekesa, 2013).

Overall, studies conducted have been directed on factors such as; limited adoption of improved groundnut varieties, yield-reducing diseases, underexploited post-harvest tech, unorganized marketing, limited quality awareness, and inadequate policy support (Monyo et al. 2009), poor allocation of resources for the decline in the groundnut crop production (Kidane et al. 2013) as well as gender disparity among land ownership (Katundu et al. 2014) leaving out key aspect on actors linkages in the overall value chain the gap this study aims to shine light on.

1.2 Performance of the Groundnuts crop in Tanzania

Groundnuts are a dominant crop in the semi-arid regions of Tanzania, produced on both small and large scales in the regions of Tabora, Shinyanga, Dodoma, and Mtwara for both food and income purposes (URT, 2012). This has contributed to boosting the economies of the regions and improved the standards of living for the rural poor, particularly women (Owusu-Adjie et al., 2017). Production trends from 2008 show that the annual production of the crop has increased from 340,770 to 810,000 tonnes in 2012 (URT, 2012).

The crop's versatility makes it more advantageous for those engaged in its production. Having advantageous property for its nutritional qualities, the groudnut crop's economic benefits cannot go unnoticed (Monyo et al., 2012). Value addition to the products or inputs and services obtained from or linked to the crop has proven to be beneficial to all those involved, either directly or indirectly. It is for this reason that all challenges facing actors involved in the crops value chain must be addressed to make it even more profitable (Cucagna and Goldsmith, 2016). The National Bureau of Statistics in Tanzania shows that the number of households involved in groundnut production increased from 734,034 households in 2003 to 870,084 households in 2007 (URT, 2012). This could be attributed to increased extension services, improved infrastructure, and accessible agricultural inputs as they were the main focus in the first and second Agricultural Sector Development Plan (ASDP I & II) (URT, 2010; URT, 2016). Despite the double increase in the annual production of the crop, production trends depicted by FAOSTAT show a decline in production from 2015 to 2017, where production plummeted from 1.8 million tonnes to 214,433 tonnes, respectively (FAOSTAT, 2017; URT, 2018).

1.3 Income Linkages and Power Dynamics among Value Chain Actors

Value chains involve interactions between stakeholders where actors exchange or transfer knowledge, money, and information in a value addition sequence. The goals of these interactions are profit-making and satisfying consumer demands. Effective participation and linkages among the chain actors are crucial to the success of these interactions (Cuddeford, 2014). While profit-making and satisfying end-users are important, income distribution among stakeholders involved in the chain cannot be ignored.

The distribution of income in the chain determines the value's improvement in terms of the influence and importance of each chain actor involved (Guritno, 2018). Long-term relationships among chain actors influence net profits and decision-making due to income linkages among actors themselves (Seville et al., 2011). Linkages are grouped as vertical or horizontal and are intertwined within a value chain since they form a foundation for trust and compliance among

actors. These linkages can be formal or informal, but they are mainly informal as they involve a domain of social capital where trust plays a vital role (M4P, 2008).

While vertical linkages are observed among actors at different levels along the chain, horizontal linkages are relationships among actors at the same level. As actors interact and link-up to pursue their collective or individual interests, their struggles turn into a dynamic power interplay (Vij et al., 2019). The extent of power possessed by actors in any value chain is based on the actors' acceptance and expectation of the power distributed and used amongst themselves (Guo, 2014). The dynamism of power in global value chains can be conceptualized as both structural and relational. The structural perspective of power explains how intrinsic characteristics of specific actors give them 'power over' other actors, while relational perspectives of power explain how power is mobilized and exercised (Choksy, 2015). The available literature on linkages in the power dynamics among value chain have gone up to giving a value chain general context on power typologies in global value chains leaving out a key aspect of linkages among actors (Dallas et al. 2019). Nevertheless on the groundnut crop value chain, collaborations among farmers which are typically linkages among actors of the same node have been a focus for the majority of researchers because the production node remains the most occupied node in the crop chain (Akpo et al. 2020).

1.4 Theoretical Framework

The study is guided by the actor interface theory, which posits that power dynamics tend to fracture social systems along interfaces that differentiate one group from another based on their power differences. These power relational changes/differences determine who controls factors of production, output, and outcome governed by context-specific socio-cultural factors that lead to economic benefits (Coles and Mitchell, 2011). Income factors are explicit components of production that pull together or disintegrate relations among chain actors based on the inequalities they possess, making them exert power visibly or invisibly among each other in a particular commodity chain (Brewer, 2011). Interfaces occur at points where varied and conflicting social fields or life-worlds intersect (Barasa et al., 2016).

The theory explains the necessity of power in value chain governance with relation to space where actors exercise their powers. The theory aims at explicating the types and sources of organizational discontinuities, factors for pull or push of relations, and the remedies towards the constraints associated with them. Focusing on the groundnut seed value chain, the theory can be used to explain how income linkages affect the performance of the chain due to power relations among actors. Its concepts explain the necessity of power in value chain governance with relation to income-based space where actors exercise their powers. However, the theory is constrained by the fact that it is more focused on solving discontinuities among actors and not linkage since it is based on the actors' behavior (Hebinck et al., 2001). Although the theory is essential in guiding this study, the study aims at determining both income linkage between actors concerning their power relations in the groundnut seed value chain. Therefore, data collection is based on the number of relations and ties with actors. This helped identify the nature and extent of power among actors that can also be used to define the continuity or discontinuity of particular ties among actors.

1.5 Methodology

The study was conducted at Kongwa and Kiteto Districts of Central Tanzania. The districts were implementation areas of the Africa Rising project. This project established an innovation platform to bring together stakeholders and actors in the groundnuts seed value chain, with the aim of creating effective groundnuts seed systems and value chains. In theory, platforms enable members to express their needs and work together to achieve a common goal on equal terms.

The districts were chosen because they represent the area where the Africa Rising project was carried out under the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT). The project's objective was to enhance the functionality of the groundnut value chains and transform key production systems in the region. These districts are located in the semi-arid zone, making them suitable for groundnut production. Kiteto District has the third-largest number of agricultural households (30,196) in the region involved in smallholder agriculture, with 28% of its land area dedicated to agricultural activities. In contrast, Kongwa District has 37,852 households engaged in agricultural production (URT, 2016).

The study employed a descriptive cross-sectional research design, which enables the assessment of various groups of people with specific characteristics at a single point in time (Toledo-Pereyra, 2012). The study utilized some qualitative research methods, specifically semi-structured interviews with key informants and focus group discussions, to gather in-depth information on the extent of relations and ties among actors. These methods were employed to analyse the power that actors hold in terms of influence and importance.

The study population constituted of members from three clusters: i) Research institutes (involving participants from ICRISAT, TARI-Hombolo and Makutupora); ii) participants at Village level where two (2) meetings were conducted in Mlali and Moleti villages. Mlali and Moleti villages were purposively sampled at the village level from both districts. iii) participants at the district level with innovation platform members drawn from Kongwa and Kiteto Districts. These were identified from the portfolio of key stakeholders who are members of the Kongwa and Kiteto innovation platforms. The heterogeneous purposeful sampling technique was used to select key informants to obtain a range of cases with relevant knowledge on the groundnut seed value chain. Key Informants involved researchers from TARI Hombolo and Makutopora, Village leaders from Mlali and Kongwa villages, and members of the innovation platform from the Kongwa and Kiteto Districts. A total of 23 key informants were sampled.

Focus group discussions (FGDs) with the identified actors from the ICRISAT portfolio were conducted to understand who are the key actors, what are existing interrelationships between these various actors, their interests and the sort of influence each has in the interaction web. Social network data was collected using a Net-Map method using a novel social network mapping method that includes an assessment of actors' influence and goals as proposed by Hauck *et al.,* (2013). The homogenous purposive sampling technique was employed to obtain the FGD participants. In total, four FGDs were conducted in the entire study area with each comprising between 8-10 participants. A total of 48 focus group participants were sampled a number of participants that guarantees efficiency to gain enough insights on several issues of importance in the study (Nyumba *et al.,* 2018).

Social network data on income linkages among actors was analysed using the UCINET statistical software package integrated with the NETDRAW program to determine centrality measures and the level of influence and importance among chain actors. The statistical package is essential in analysing social network data and its embedded program is essentially used in drawing social network maps/diagrams. Actors and members of the innovation platform were requested to respond based on income linkages with other actors, thus their responses were denoted as (1 = There is linkage) and (0 = No linkage). These denotations were used to analyse and explain the ingoing (indegree) or level of influence and outgoing (outdegree) or level of importance as features of power amongst these actors. The social network analysis was conducted to calculate the centrality measures i.e betweenness and degrees to assess the strength of relationships and interactions between actors. Furthermore, qualitative data obtained from semi-structured interviews were subjected to content analysis that involved breaking,

comparing and categorizing to add value to social network data analysed through the UCINET software.

2.0 Findings and Discussion

2.1 Income linkages Extents among Actors in the Groundnuts Seed Value Chain

The findings of the study indicate a wide diversity of actors in the groundnut seed value chain income relations, as shown by the vertical and horizontal income linkages. This diversity plays a significant role in influencing the power relations that actors have with each other in the chain. The study observed variations in the level of influence and importance, which are vertical and horizontal ties, respectively. These variabilities have been used to explain the level of power relations among actors based on their income. The variability of income ties was found to be higher at the village level than at the district level, where the variabilities are explained by a smaller total of income ties in the two villages in Table 3.1and Table 3.2.

The results indicate that extension officers and traders have a relatively higher number of horizontal income linkages or ties at the village level and are therefore more influential compared to other actors. As noted by Odunze (2019), horizontal integrations can lead to higher income, improved market channels, and increased participation, demonstrating the benefits of horizontal linkages among actors with a higher number of ties in the value chain. However, it should be noted that these benefits are only significant when these linkages involve more actors, which is contrary to what was observed in the study area (Pera et al., 2019). Table 3.1 presents the income vertical and horizontal linkages among actors in Moleti Village.

Table 1: Income linkage between actors in the groundnuts seed value chain at Moleti village

	Farmer	Extension officer	Organizations	Village Leaders	Middlemen	Researchers	Traders	Totals
Farmer	-	0	0	0	0	0	0	0
Extension Officer	0	-	0	1	1	1	0	3
Organizations	1	0	-	0	1	0	0	2
Village leaders	0	0	0	-	0	0	0	0
Middlemen	0	0	0	0	-	0	0	0
Researchers	0	0	0	0	0	-	0	0
Traders	1	1	0	0	1	0	-	3
Totals	2	1	0	1	3	1	0	-

*1= There is likange, 0 = There is no linkage

In Moleti, farmers had a relatively high number of vertical linkages compared to other actors, indicating a higher level of importance compared to other actors. In contrast, in Mlali Village, a relatively higher number of horizontal linkages was observed. This indicates the extent of power farmers have in dictating terms or activities towards other actors and in cooperating with other actors. This finding aligns with the argument made by Herrmann et al. (2015) that farmers can benefit aggregately as an outcome of collaboration, which is a key aspect associated with vertical linkages. Table 3.2 presents the income vertical and horizontal linkages among actors in Mlali Village

Table 1: Income linkage between actors in the groundnuts seed value chain at Mlali Village

	Farmers	Climate Department	Researchers	Middlemen	Extension	Village leaders	NGOs	Traders	Totals
Framers	-	0	0	1	1	0	1	1	4
Climate Dept	0	-	0	0	0	0	0	0	0
Researchers	0	0	-	0	0	0	0	0	0
Middlemen	1	0	0	-	0	0	0	0	1
Extension	0	0	0	0	-	0	0	0	0
Village leaders	0	0	0	1	0	-	0	0	1
NGOs	0	0	0	0	0	0	-	0	0
Traders	0	0	0	0	0	0	0	-	0
Totals	1	0	0	2	1	0	1	1	-

1= There is likange, 0 = There is no linkage

At the district level, the study found that the number of actors in the value chain was relatively higher compared to the village level. It was also found that NGOs, CBOs, and consumers had a relatively higher number of horizontal income ties, which is an indication of their greater influence and power compared to other actors. These organizations are referred to as anchors in the value chain setup, as they link different actors, indicating their powerful position in the value chain (Quak, 2019). These organizations are also referred to as lead firms (Nguni, 2015), as they tend to hold a dominant position in the value chain.

Table 3: Income linkage between actors in the groundnuts seed value chain at the district set-up

	Farmers	NGOs	CBOs	Researchers	Local Government	Central Government	Consumers	Transporters	Traders	Agro-dealers	Total
Farmers	-	0	0	0	1	0	0	1	0	1	3
NGOs	1	-	0	1	0	1	0	1	1	1	6
CBOs	1	0	-	1	0	1	0	1	1	1	6
Researchers	0	0	0	-	0	0	0	1	0	0	1
Local gvt	0	0	0	0	-	0	0	0	0	0	0
Central gvt	0	1	0	1	1	-	0	1	0	0	4
Consumers	1	0	0	0	1	1	-	1	1	1	6
Transporters	0	0	0	0	1	0	0	-	0	0	1
Traders	1	0	0	0	1	1	1	1	-	1	6
Agro-dealers	0	0	0	0	1	1	0	1	0	-	3
Total	4	1	0	3	6	5	1	8	3	5	-

*1= There is linkage, 0 = There is no linkage

Consecutively, transporters and the local government were found to have a relatively higher number of ingoing ties, indicating their higher level of importance in the value chain setup. This suggests that they are more powerful due to the level of importance they possess compared to other actors based on the number of ties or linkages they have with other actors. As noted by Khan and Ghalib (2012), the local government performs service-oriented roles, which explains its position and the power it has within the value chain setup.

2.2 The extent of Power Linkages Assessment among Actors in the Value Chain

To characterize the position of actors' power relations in the groundnut seed value chain, centrality measures (degrees and betweenness) were analyzed. The centrality measures were determined using the UCINET statistical package and aided in identifying stronger, intermediate, and weaker actors in the value chain in terms of influence and importance. Furthermore, these measures helped to identify the direction of interactions, specifically regarding the income aspect.

The betweenness centrality measure was used to measure the potential vertex and identify the extent of a vertex in a network (Raghavan et al., 2014). This measure was used to show how an actor connects to other actors, indicating their power in the value chain setup. According to Hafner-Burton and Montgomery (2012), betweenness centrality demonstrates the notion of power among actors in a particular setup.

Table 2: Centrality measures on power linkages among actors in the groundnuts seed value

Level	Actors	Normalized betweeness	Normalized OutDegree	Normalized InDegree
Moleti	Traders	0.000	50.000	0.000
	Extension Officers	6.667	50.000	16.667
	Organisations	3.333	33.333	16.667
	Farmers	0.000	0.000	33.333
	Middlemen	0.000	0.000	33.333
	Researchers	0.000	0.000	0.000
	Village leaders	0.000	0.000	33.333
Kongwa and Kiteto	Centra Government	20.000	44.444	55.556
	NGOs	12.500	66.667	11.111
	Agro- dealers	10.119	33.333	55.556
	Traders	7.500	66.667	33.333
	Transporters	7.500	11.111	88.889
	Farmers	1.994	33.333	44.444
	Consumers	0.556	66.667	11.111
	CBOs	0.000	66.667	0.000
	Researchers	0.000	11.111	33.333
	Local Government	0.000	0.000	66.667
Mlali	Farmers	14.856	57.143	14.286
	Middlemen	9.524	0.000	0.000
	Researchers	0.000	0.000	0.000
	Climate Department	0.000	14.286	28.571
	Extension Officers	0.000	0.000	14.286
	Village Leaders	0.000	14.286	0.000
	Organisations	0.000	0.000	14.286
	Traders	0.000	0.000	14.286

The study findings confirmed that farmers and middlemen had the highest relative normalized betweenness compared to other actors, and this was consistent in both districts and at the village levels. In Mlali village, organizations (CBOs and NGOs) and extension officers showed a relatively higher value of normalized betweenness compared to other actors in Moleti village. This implies that these actors have higher power to connect with other actors and signifies their high relational power. A participant in a key informant interview provided evidence to support this;

> *" .. to a great extent, the organizations in our villages have helped us to link with markets for our products and have provided knowledge regarding the best practices in production.*

This has helped us to improve not only in terms of production but also in terms of accessing markets. In the past few years, it was difficult for us to add value to the crops we produce, including groundnuts, because we lacked the necessary skills until the organizations started reaching out to us. They have equipped us with knowledge and connected us with customers, allowing us to add value to our crops and increase our incomes." (Key informant Interview in 21st July, 2020 at Kiteto District).

As observed in the groundnut seed value chain, a high normalized betweenness value found in CBOs and NGOs (Mlali) and farmers and middlemen (Kiteto and Kongwa districts) indicates the influence and importance of these actors in the chain setup. Their power results in connecting other actors in the value chain, thus giving them relatively higher power in the flow and sharing of resources and information that is income-linked.

Moreover, both indegrees and outdegrees, used as centrality measures, showed the strength of actors in terms of connections with other actors, as explained by Cadini et al. (2008). In the study findings, traders and extension officers had a higher number of outdegrees and hence a higher influence level compared to other actors in Moleti Village, while farmers held the same position in Mlali Village. At the district level, organizations (CBOs and NGOs), traders, and consumers had a higher number of outdegrees, indicating their power and relatively higher influence level compared to other actors. This was also mentioned in the FGD with a innovation platform members who said;

"based on our interactions with other actors in the groundnut seed value chain, we have more interactions with extension officers, who frequently visit our farms in the villages, and traders. The interactions are more prevalent in Kongwa and Kiteto districts where we go to sell our products, probably because these districts are more urbanized than Moleti. Even when we do not meet traders, it is easier to sell our produce than if we choose to sell them only at the village market." (Focus Group Discussion 23rd July, 2020 at Moleti Village)

This centrality measure is always normalized by the maximum number of neighbors a node can have. The values associated with this dimension indicate the level of importance and influence in a particular setup, clearly demonstrating how influential these actors are, as explained by Seuring and Mueller (2008), who discuss the outcomes of greater outdegrees and indegrees in a network.

In contrast, income indegrees, as opposed to income outdegrees, indicate the rate of importance based on the number of connections, ties, or links between an actor and other actors. The study findings demonstrate that farmers and middlemen in Moleti Village and Climate Department officials in Mlali Village have a greater number of indegrees compared to other actors in their respective village setups. The observed indegrees indicate a relatively higher power in terms of importance with respect to income ties in the groundnut seed value chain setup compared to other actors. This same trend is observed at the district level, where the local government as an entity has higher income ties, followed by agro-traders, thereby proving to be more powerful and exerting a higher level of importance in the district setup compared to other actors. Actors with zero income indegrees or outdegrees have no ties and are, therefore, the weakest in terms of importance and influence. At the village level, researchers fell into this group with zero total ties and betweenness, indicating that they are less influential and of less importance and, therefore, less powerful. According to Devaux *et al.,* (2018), researchers are less important and influential in the seed value chain setup at lower levels because their activities do not match the actual requirements of other actors at those levels. Another factor is that researchers are often focused on expanding new technologies and not on linking them with the needs of other actors.

3.0 Conclusion and Recommendation

Income linkages are crucial to ensuring that all actors in the value chain benefit, while minimizing faults that can weaken the chain. The study found that income linkages among actors were generally poor and controlled by a few chain actors who are connected both vertically and horizontally. Actors, such as middlemen, proved to be more important at the village level, while farmers were more influential. However, at the district level, organizations and traders filled that position.

Improvement strategies for income ties among actors should focus on ensuring that all actors in the chain have relatively equal influence and importance aligned with both vertical and horizontal ties. To achieve this, sustainable market-led strategies and supportive public and private partnerships should be enforced, and actors involved should receive inclusive collective training.

Taking researchers as an example, the observed fewer ties in the chain indicate the exclusion of some actors, which affects the groundnut chain, especially concerning the adoption of new groundnut seed varieties and technologies vital in production intensification. To ensure the groundnut seed value chain is stable and performing, modifications should ensure the inclusion of all identified actors and provide space for actors to occupy in terms of influence and importance in the chain set up in other aspects such as material and knowledge aspects. This will ensure that all actors are interconnected and closely linked, improving their linkages and positively affecting the value chain and the groundnut crop in general.

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POLICY BRIEF

You must include a policy brief (see the instructions at the journal's website): In the context of agriculture, value chains play a crucial role in improving the quality and competitiveness of crops. The presence of horizontal and vertical linkages among actors within the value chain are essential for fostering innovations and achieving common goals. Tanzania specifically in the semi-arid regions, the groundnuts seed value chain faces challenges related to input and output market constraints. Despite being a major groundnut producer globally, Tanzania has experienced a decline in groundnut yields in recent years. Linked to this decline, understanding the factors influencing the performance of the groundnuts seed value chain, including income distribution and power dynamics among actors, is vital for addressing these challenges and improving overall performance. This policy brief aims to highlight the gaps in income linkage and power relations among actors in the groundnuts seed value chain since enhancing income linkage and power relations will contribute to the improved performance and competitiveness of the groundnuts seed value chain, benefiting farmers, processors, and other stakeholders.

Power dynamics within the groundnut seed value chain play a crucial role in determining the success and well-being of actors involved linking less and high influential actors in the chain. It is of high significance to understand that power dynamics and income linkages for improving collaboration and decision-making in the groundnut seed value chain set a tone for the chain performance. The diversity of actors and their income linkages in the groundnut seed value chain, influences power relations within the chain since these variations determine the influence and importance among actors based on vertical and horizontal ties actors in the chain have. The diversities are resulted by the levels of engagement and levels of linkages these actors have. On this regard, promoting equitable power relations within the groundnut seed value chain requires strengthening collaborations among actors, supporting inclusive policies, integrating research with the practical needs of stakeholders, and investing in capacity building initiatives. This promotion could begin by identifying actors with the ability to connect with other actors, facilitating the flow and sharing of income-linked resources and information such (CBOs and NGOs) and extension officers who were found to have a relatively higher value on this regard. These actors play crucial roles in facilitating transactions, providing market access, and influencing decision-making processes within the value chain hence strengthening these interactions can unlock improved market opportunities for farmers, resulting in more efficient sales of their produce.

Policy makers should dedicate their efforts on improving income linkages in the groundnut seed value chain, a process that requires concerted efforts to promote equitable distribution of power, strengthen vertical and horizontal ties, and foster inclusive participation. Enhancing income linkages will not only improve the performance of the groundnut seed value chain but also contribute to the overall development and sustainability of the groundnut crop sector. This can be achieved through strengthen vertical and horizontal ties to ensure that all actors have relatively equal importance and influence within the chain, fostering public-private partnerships to support a relatively fair income distribution among actors and lastly, strengthening both vertical and horizontal ties among actors in the value chain through enhanced inclusion of the relatively least influential and important actors in the chain.